



AGENDA REPORT

BEACHES, PARKS & RECREATION COMMISSION
Meeting Date: June 14, 2016

Agenda Item 5.C.
Approvals: _____
Dept. Head ES
Manager _____
Admin. Asst. MS

Department: Beaches, Park and Recreation
Prepared By: Pamela Passow, Assistant Beaches, Parks and Recreation Director

Subject: *SAN CLEMENTE PIER PRESENTATION FROM COASTAL ADVISORY COMMITTEE MEETING*

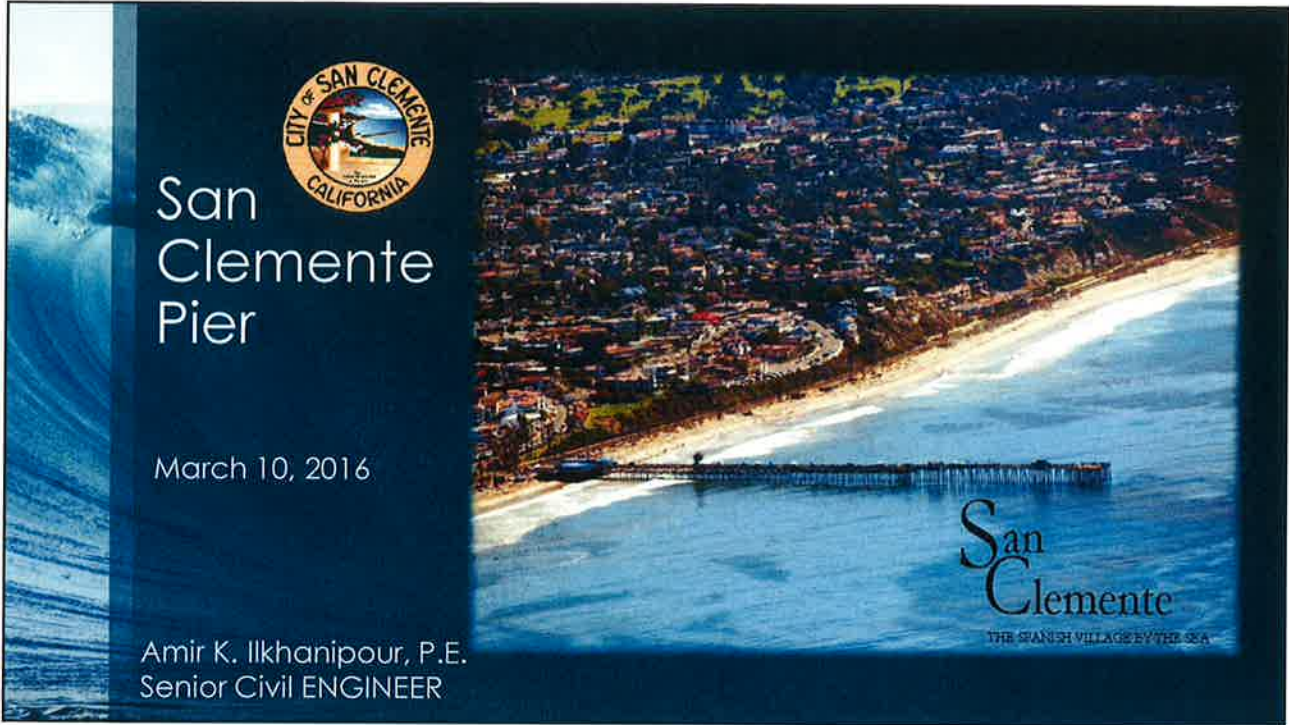
Fiscal Impact: None.


Summary: At the April 12, 2016 Beaches, Parks and Recreation Commission meeting, Coastal Advisory Committee representative, Commissioner Gates requested the presentation regarding the San Clemente Pier presented to the Coastal Advisory Committee on May 10, 2016 be provided to the Beaches, Parks and Recreation Commission. The presentation is attached for Commission review.

Recommended Action: None.

Attachments: San Clemente Pier Presentation dated March 10, 2016

Notification: None.

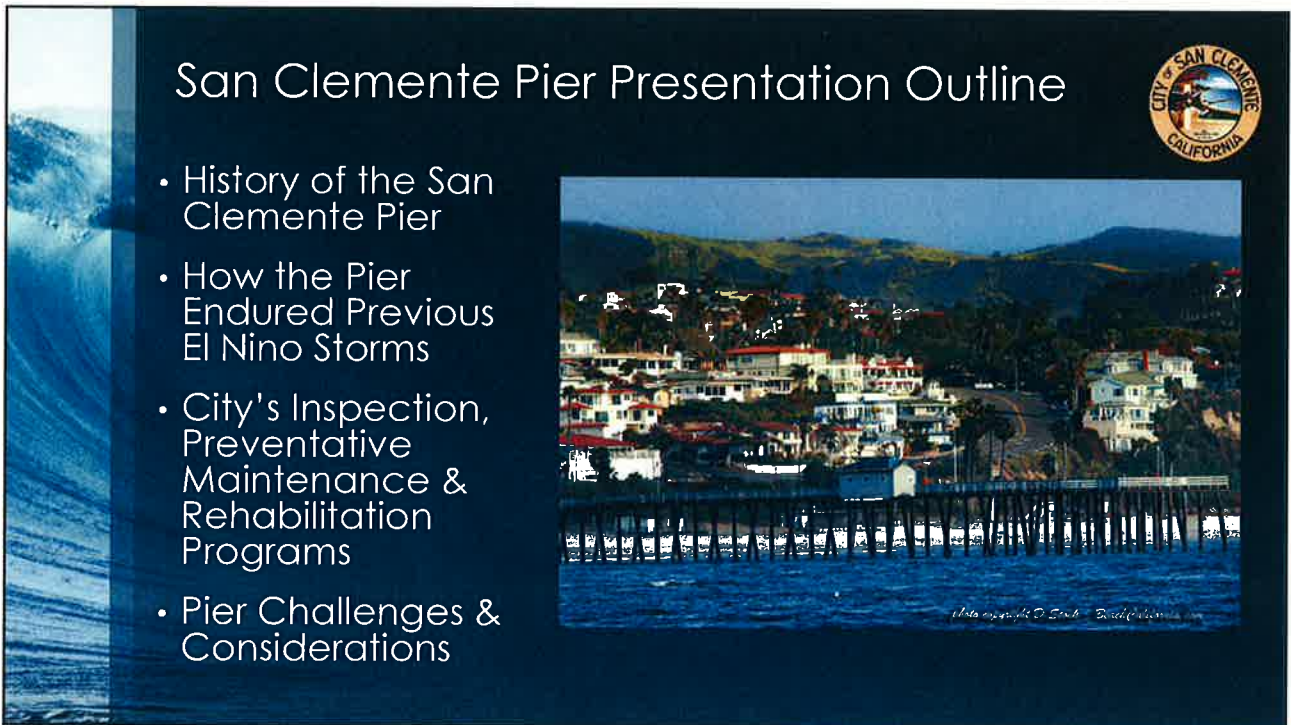



 San Clemente Pier

March 10, 2016

Amir K. Ilkhanipour, P.E.
Senior Civil ENGINEER

San Clemente
THE SPANISH VILLAGE BY THE SEA



 San Clemente Pier Presentation Outline

- History of the San Clemente Pier
- How the Pier Endured Previous El Nino Storms
- City's Inspection, Preventative Maintenance & Rehabilitation Programs
- Pier Challenges & Considerations




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History of the San Clemente Pier

1928 – The original San Clemente Pier started out 24 ft. wide & 1,200 ft. long for pleasure and fishing use.



History of the San Clemente Pier

1928 - The citizens of San Clemente were so excited to use their Pier that the City allowed the first 900 feet of the Pier to be used during construction.



History of the San Clemente Pier

1928 - The wooden municipal pier was built & paid for by Ole Hanson at no charge to the citizens and designed by the town's engineer, William Ayer.



History of the San Clemente Pier

- San Clemente Pier perspective looking down Avenida Del Mar



History of the San Clemente Pier

Circa 1928 during Prohibition, the end of the pier's café had a trap door for rum runners to move illegal alcohol from small boats underneath the pier.



History of the San Clemente Pier

- Fishing on the San Clemente Pier.

- With the Pier construction, fishing became a huge pastime for residents & visitors. Lobsters populated the area around the pier, abalone was plentiful in the small reef off Mariposa. For decades anglers pulled a million tons of fish per year from local waters.



F-1705

Fishing on the pier at San Clemente, California

1939 Tropical Storm in Southern California



San Clemente Pier Storm Damage



September 1939

- A tropical storm also known as the 1939 Long Beach tropical storm, El Cordonazo, The Lash of St. Francis caused significant damage.
- Half of the pier was washed away destroying a café, tackle shop and Owl Boat Company.
- The reconstruction added 275 new pilings and changed the pier into a T-shape. The pier was rebuilt for \$40k (\$520k – 2016).

1983

Storm damage tore 400 ft. from the end of the Pier and 80 ft. from its mid-section.

SunPost



San Clemente Pier Storm Damage

1983

- 36% of the length of the pier was destroyed
- 48% of the total number of piles went missing



San Clemente Pier Storm Damage



1983

"The Gallery restaurant & tackle shop at the end of the pier surrendered to the 35-foot waves."



San Clemente Pier Storm Damage



1983





San Clemente Pier Storm Damage 1983



The City of San Clemente rehabilitated the original standing structure after 1983 storm with the help of Save Our Pier, raising \$90,000 and \$1 million from FEMA.

Wood pilings at the end of the Pier were replaced with steel pilings, and the destroyed portions were rebuilt.



1983 Recommended Plan Reconstruct for the Pier



- Stage I - Develop construction plans to reconstruct the 80 foot section of the Pier between the base & remaining damaged structure. The use of salvageable materials was anticipated.
- Stage II - Pier reconstruction for the rehabilitation of the damaged & separated section of the Pier.
- Stage III - Reconstruction of approximately 350 feet of the Pier with steel piles that was completely destroyed during the recent storm.

1983 Reconstruction Funding for the Pier



- Stage I (Design & Planning)
- Stage II (Mid-Pier Const.)
- Stage III (End of Pier Const.)
- 75% Federal Reimbursement
- Local Share

PIER RECONSTRUCTION COSTS 1983	
Stage I Cost	\$100,000
Stage II Cost	<u>160,000</u>
Sub-Total	\$260,000
Stage III Cost	560,000
TOTAL	\$820,000
75% Federal Share	<u>615,000</u>
LOCAL SHARE	\$205,000

San Clemente Pier Storm Damage



1988

On January 17-18th, the pier took some major hits but survived

SunPost





San Clemente Pier Storm Damage 1988



- Severe storm waves coincident with high tides caused severe beach erosion that undermined & endangered several San Clemente facilities along the beach.
- These facilities included Marine Safety, restrooms, concession buildings, the entrance to the pier, picnic shelter areas, access roads, the trash disposal area, and the utilities.
- Wave-driven debris acted as a battering ram destroying some pier piles.



San Clemente 2010 Pier Repairs



- Stringer repairs (8)
- Timber piles replacements and repairs (26)
- Concrete piles replacements (8)
- Repair to protective coating on steel piles and pile caps (82)
- Steel pile caps repairs (22)
- Installation of an active Corrosion Protection (CP) system
- Bracing repairs (4)
- Deck plank replacement (12,000 square feet)

San Clemente Pier Repairs



2010

Pile driving equipment moving on long beams/track to prevent excessive point loading



San Clemente Pier Repairs



2010

Scaffolding for under the Pier



San Clemente Pier Repairs

2010

Scaffolding being assembled under the Pier to repair steel piles



San Clemente Pier Repairs

2010

Enclosure for steel Piles' repairs under the Pier to prevent debris falling in Ocean



San Clemente Pier Repairs



2010

HDPE jackets are placed around wood piles & new bracing being installed



San Clemente Pier Repairs



2010

January 20, 2010 destroyed contractor's scaffolding and enclosure (approximately worth \$300k)



San Clemente Pier Asset Management Program



- Inspecting the Pier on a 5-6 Year cycle
- Proactive Maintenance, Rehabilitation & Replacement Program
- Proposing a Reserve for future and ongoing work
- Average of \$425k / year spent over last 16 years

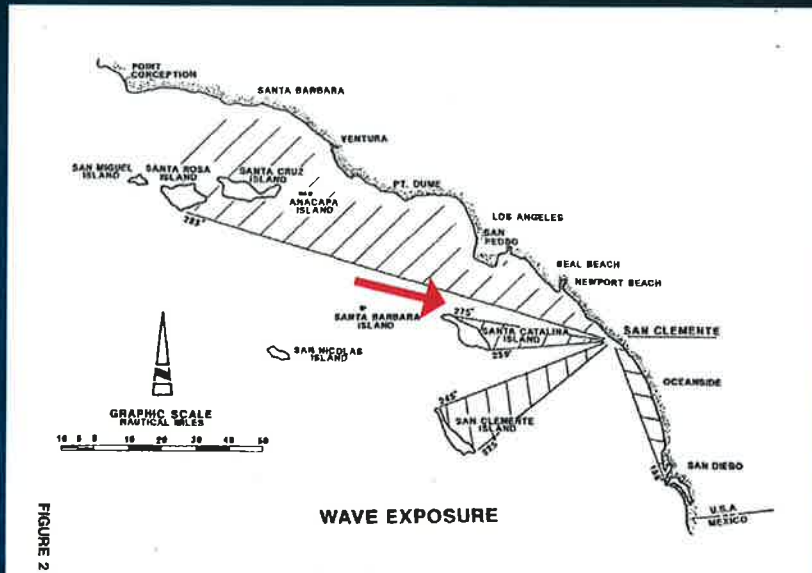


Pier Challenges & Considerations



- Pier subject to constant surf, swells, wind and sand abrasions on the piles
- Pier directly exposed to Ocean swells entering from three main windows
- The more severe waves and storms hit the Pier between azimuths 275° and 285°

Pier Challenges & Considerations



Pier Challenges & Considerations



- HDPE wrapping around wood piling protects pilings from marine borers; however, hides wood deteriorations behind wrapping
- Steel piles need protective coating, cathodic protection and monitoring
- When losing Pier parts (i.e. bracing, broken piling), these floating parts become "battering rams" against the Pier